# Assignment 04

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## Question 1

### What is happening to price over time (yr_built)

```
houses <- read_csv("data/KING COUNTY House Data.csv")
```

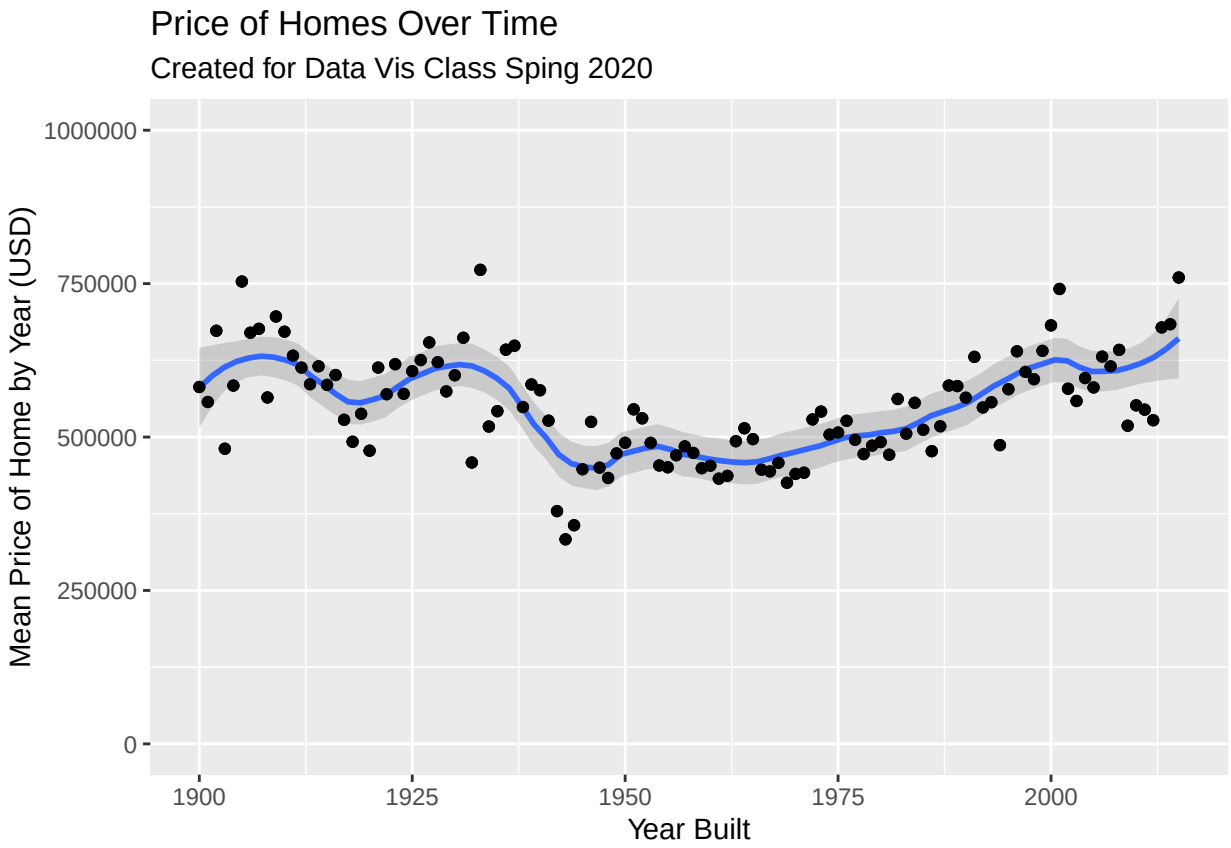
```
## Parsed with column specification:
## cols(
##   .default = col_double(),
##   date = col_datetime(format = "")
## )
```

```
## See spec(...) for full column specifications.
```

```
houses_mean <- houses %>% group_by(yr_built) %>%   summarize(mean_price = mean(price, na.rm = TRUE))
```

```
b <- ggplot(houses_mean, aes(x=yr_built, y=mean_price))

b2 <- b + labs(x = "Year Built", y = "Mean Price of Home by Year (USD)", title = "Price of Homes Over Ti

B <- b2 + geom_point() + geom_smooth(aes(yr_built, mean_price), span=0.25)

B2 <- B + geom_point()

B2
```

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```



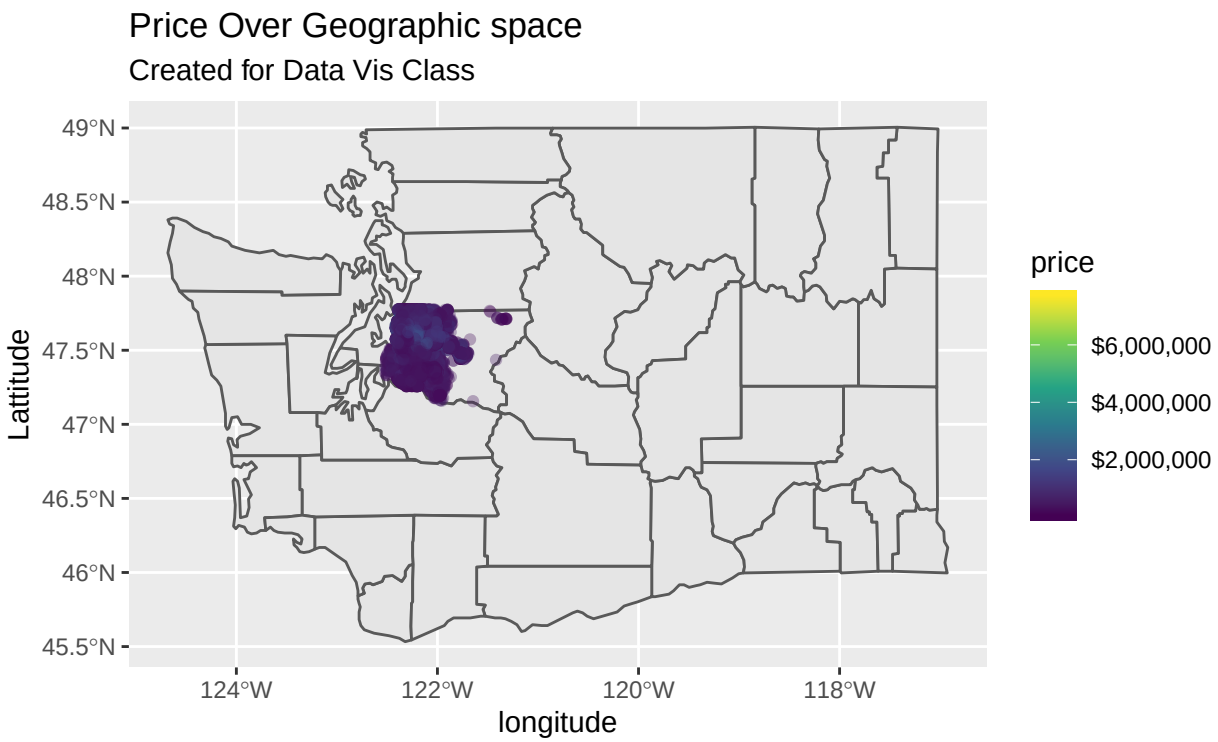

Above we see the mean price of homes for the years 1900-2015. The first value in 1900 is a little under $600,000. The value is $581,536.60 to be exact. Over time, there is a fluctuation in the mean price of homes. The first big drop we see appears around the year 1935. From then on, after the 1950s the mean price of homes climbs with another dip in the 2000s.

## Question 2

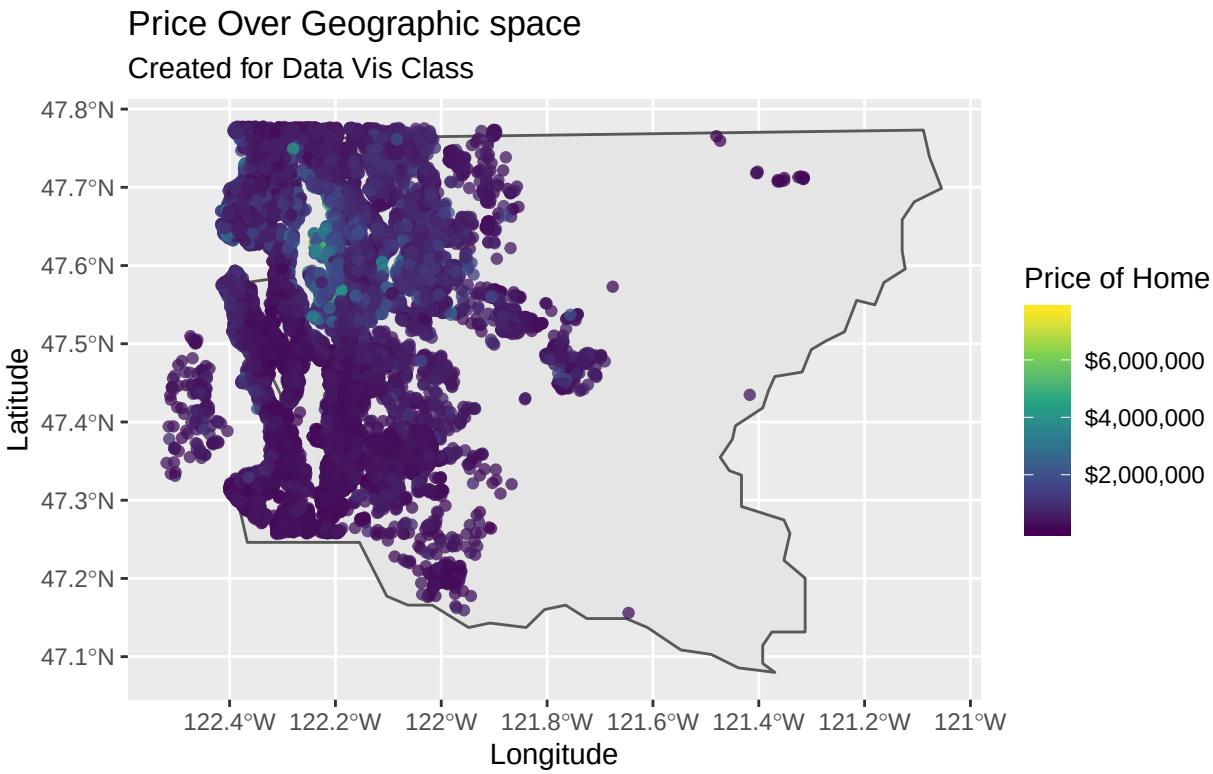
### What is happening to price over geographic space (Can be lat / long, zipcode, etc)

```
counties <- st_as_sf(map("county", plot = FALSE, fill = TRUE))

counties_wa <- counties %>%
  filter(str_detect(ID, 'washington,'))


map1 <- ggplot(counties_wa) + geom_sf()


map2 <- map1 + labs(x = "longitude",
                y = "Lattitude",
                title = "Price Over Geographic space",
                subtitle = "Created for Data Vis Class") +  geom_point(data = houses, aes(x = long, y =
```

```
map2
```




```
test <- counties_wa %>%
  filter(str_detect(ID, "king")) %>%
  ggplot() +
  geom_sf() +
  geom_point(data = houses, aes(x = long, y = lat ), alpha= .05)

wa_close_up <- test + labs(x = "Longitude",
                y = "Latitude",
                title = "Price Over Geographic space",
                subtitle = "Created for Data Vis Class") +  geom_point(data = houses, aes(x = long, y = l

wa_close_up
```

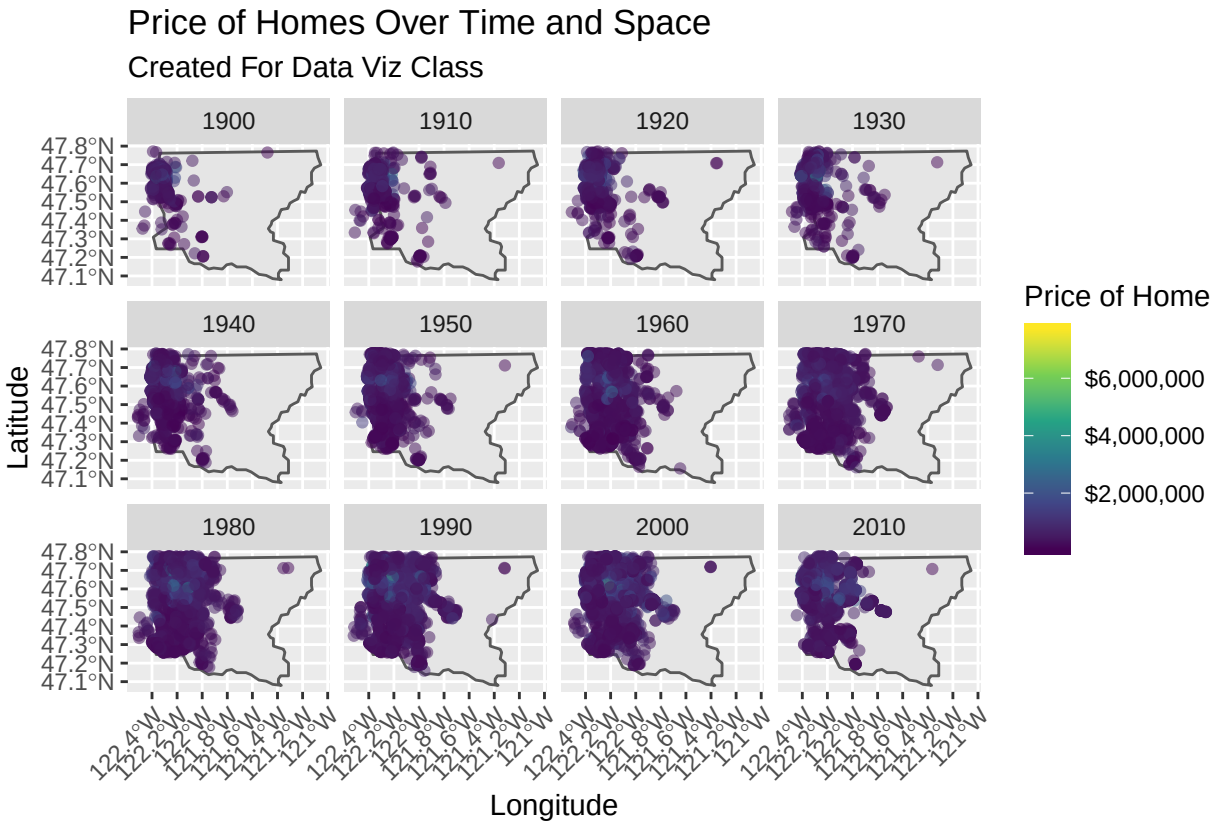



From the above maps, we see as you move farther away from Seattle the price of homes increase. There are very large companies, like Amazon, that have headquarters in this area. The increase in the price of homes in Seattle can be due to wealthier individuals living here.

## Question 3

### What is happening to price over time and space?

```
counties_wa %>%
  filter(str_detect(ID, "king")) %>%
  ggplot() +
  geom_sf() + theme(axis.text.x = element_text(angle = 45, hjust=1)) +
  labs(x = "Longitude", y = "Latitude", title = "Price of Homes Over Time and Space", subtitle = "Creat
  geom_point(data = houses, aes(x = long, y = lat, color = price ), alpha= 0.50) + scale_colour_viridis_
  facet_wrap(~decade)
```

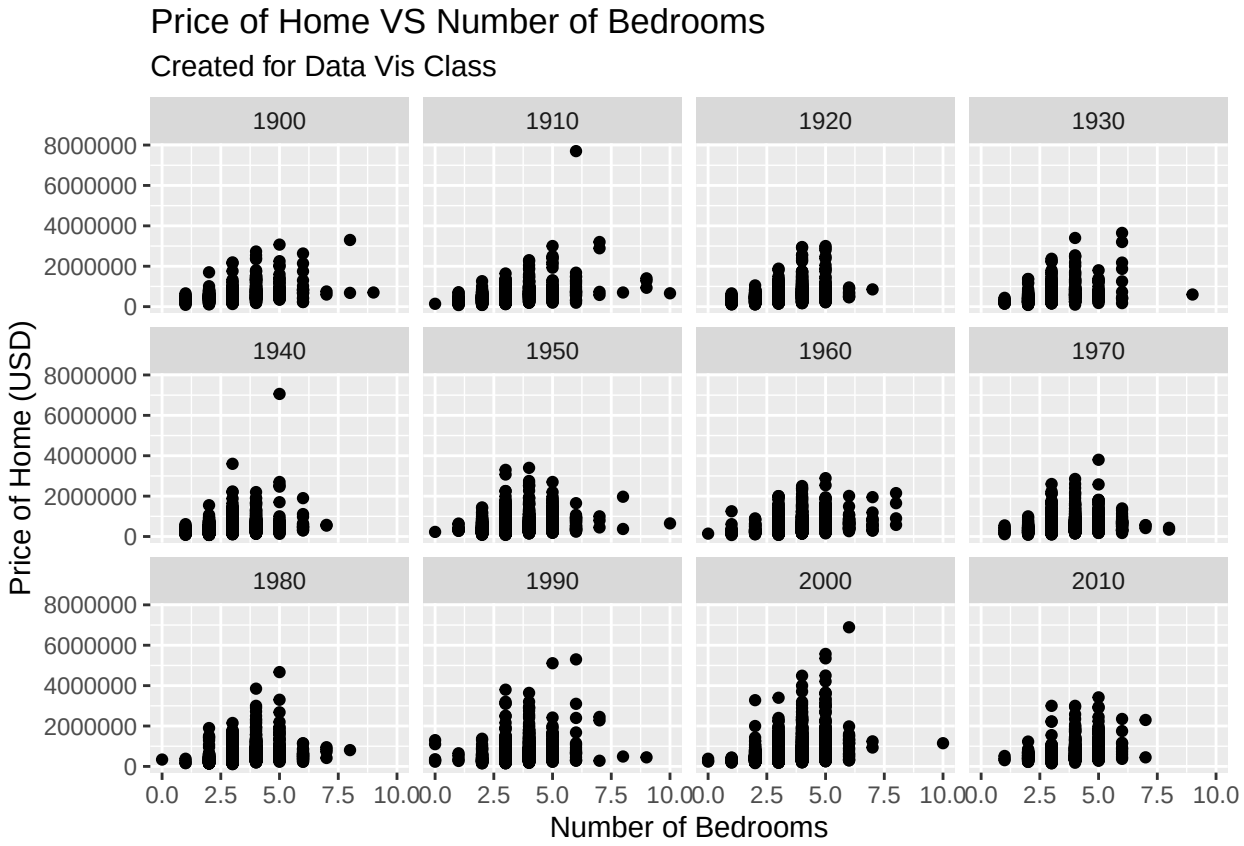



Here we see a brief look a the homes in Washington King county as the decades' pass. You can see that not only does the number of homes increase but again, the homes near Seattle increase in price. Amazon was founded in the mid-1990s so naturally, this is when prices of homes increase which can be seen from the color variant.

## Extra Credit

```
extra_credit <- ggplot(houses, aes(x = bedrooms, y= price ))

extra_credit1 <- extra_credit + labs(x = "Number of Bedrooms",
               y = "Price of Home (USD)",
               title = "Price of Home VS Number of Bedrooms",
               subtitle = "Created for Data Vis Class") + xlim(0, 10)


extra_credit1 + geom_point() + facet_wrap(~decade)
```

```
## Warning: Removed 2 rows containing missing values (geom_point).
```




I was curious about the price of homes over time when number of rooms was considered. It appears that prices were 'relatively' low and 5 rooms seemed to be the magic number for the most expensive homes. If we recall the earlier visuals, when Amazon was founded in the 1990s, we see an increase in the price of the homes over time.